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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/890,215	07/26/2001	Paulus Cornelis Duineveld	NL000510	7521

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EXAMINER	
ZIMMERMAN, GLENN	
ART UNIT	**PAPER NUMBER**
2879	

DATE MAILED: 06/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/890,215	DUINEVELD ET AL.	
	Examiner	Art Unit	
	Glenn Zimmerman	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 April 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *13-16* is/are allowed.

6)☒ Claim(s) *7-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 July 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *08 April 2003* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☒ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

Amendment, filed on April 8, 2003, has been entered and acknowledged by the examiner.

Drawings

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on April 8, 2003 have been approved.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 10-12, each of these claims depend from canceled claim 1 and are thus indefinite.

A 112 2nd paragraph rejection has been determined for claim 1, as written about above. However, a further evaluation of the claim will be done while interpreting "claim 1" in line 2 as "claim 7".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 7-9 are rejected under 35 U.S.C. 102(a and b) as being anticipated by Friend WO 99/12398.

Regarding claim 7, Friend discloses an organic electroluminescent device **(title; page 12 paragraph 2)** having a plurality of independently addressable electroluminescent elements **(page 13 lines 14-21)**, the device comprising:

A patterned first electrode layer **(patterned ITO anode electrode Fig. 4 ref. 24)** including a plurality of first electrodes; a second electrode layer **(cathode electrode ref. 25)**;

An organic **(light-emissive regions ref. 23)**, optionally patterned, electroluminescent layer sandwiched between the first and the second electrode layer;

An organic charge transport layer **(page 9 lines 4-8; Fig 8 ref. 77)** having mutually separate charge transport areas **(page 5 lines 25-26)** which are positioned between the electroluminescent layer and the first electrode layer; and

A relief pattern **(insulating region or photoresist region ref. 21; page 11 line 18)** separating the charge transport areas along each first electrode and between neighboring the first electrodes.

Regarding claim 8, Friend discloses the organic electroluminescent device of claim 7, wherein the relief pattern includes positively-sloped sections **(Fig. 4 no ref. #; page 11 lines 20-22)**. The slope of the positively sloped sections is infinite which is positive.

Regarding claim 9, Friend discloses the electroluminescent device of claim 7, wherein the organic electroluminescent device is a display device of a passive matrix type **(page 13 line18)**;

Wherein the plurality of first electrodes are a plurality of row electrodes **(page 13 line 15)**; and

Wherein the second electrode layer includes a plurality of independently addressable column electrodes **(page 13 line 17)** crossing the row electrodes and the relief pattern **(Fig. 4 no ref. #)**.

Claims 7-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Kobayashi et al. U.S. Patent 6,575,800.

Regarding claim 7, Kobayashi et al. disclose an organic electroluminescent device **(title; col. 2 lines 20-25)** having a plurality of independently addressable electroluminescent elements **(Fig. 1 or 2 no ref. #)**, the device comprising:

A patterned first electrode layer **(col. 5 lines 60-61)** including a plurality of first electrodes **(anode ref. 6)**; a second electrode layer **(cathode ref. 1)**;

An organic **(light emitting layer ref. 2; col. 2 lines 20-25)**, optionally patterned, electroluminescent layer sandwiched between the first and the second electrode layer;

An organic charge transport layer **(Hole Injection Transport and Fluorescent Conversion Layer ref. 5; col. 7 lines 1-8)** having mutually separate charge transport areas **(Figs. 1 and 2 no ref. #)** which are positioned between the electroluminescent layer and the first electrode layer; and

A relief pattern **(banks ref. 4; col. 5 lines 7-15)** separating the charge transport areas along each first electrode and between neighboring the first electrodes.

Regarding claim 8, Kobayashi et al. disclose the organic electroluminescent device of claim 7, wherein the relief pattern includes positively-sloped sections **(Figs. 1 and 2 no ref. #)**. The slope of the positively sloped sections is infinite which is positive.

Regarding claim 9, Kobayashi et al. disclose the electroluminescent device of claim 7, wherein the organic electroluminescent device is a display device of a passive matrix type **(Figure 8 no ref. #)**;

Wherein the plurality of first electrodes are a plurality of row electrodes **(col. 5 line 60-61)**; and

Wherein the second electrode layer includes a plurality of independently addressable column electrodes **(col. 5 lines 50-51; col. 9 line 60)** crossing the row electrodes and the relief pattern **(Figs. 1 and 2 ref. 1)**.

Claims 7-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Kobayashi et al. Japanese Patent Application Publication 11-74083.

Note that Kobayashi et al. U.S. Patent 6,575,800 (rejection above) is based on Japanese Patent Application 9-236326 through foreign priority, and the latter is in Japanese and the former in English. Therefore, the English language U.S. Patent is used as an interpretation of the Japanese language Patent Application, since both Publications write about the same invention. This allows for a 102(a and b) rejection based on the Japanese Patent Application, and also a 102(e) rejection based on the U.S. Patent.

Claims 7 and 8 are rejected under 35 U.S.C. 102(a) as being anticipated by Seki et al. EP 0 982 974 A1.

Regarding claim 7, Seki et al. disclose an organic electroluminescent device **(title)** having a plurality of independently addressable electroluminescent elements **(Fig. 1 no ref. #)**, the device comprising:

A patterned first electrode layer **(anode ref. 101; paragraph 0035)** including a plurality of first electrodes **(Fig. 1)**; a second electrode layer **(cathode ref. 110)**;

An organic **(light-emitting layer ref. 109; paragraph 0038)**, optionally patterned, electroluminescent layer sandwiched between the first and the second electrode layer;

An organic charge transport layer **(copper phthalyocyanine hole-injecting and transporting layer ref. 107)** having mutually separate charge transport areas which are positioned between the electroluminescent layer and the first electrode layer; and

A relief pattern **(partitioning member ref. 103)** separating the charge transport areas along each first electrode and between neighboring the first electrodes.

Regarding claim 8, Seki et al. disclose the organic electroluminescent device of claim 7, wherein the relief pattern includes positively-sloped sections **(Fig. 1 no ref. #)**. The slope of the positively sloped sections is infinite which is positive.

Claims 7-8 are rejected under 35 U.S.C. 102(a) as being anticipated by Seki et al. WO99/12369.

Note that EP 0 982 974 (rejection above) is based on PCT/JP98/03935 which is WO 99/12395 through foreign priority, and the latter is in Japanese and the former in English. Therefore, the English language Publication is used as an interpretation of the Japanese language WO Publication, since both Publications write about the same invention. This allows for a 102(a and b) rejection based on the WO publication, and also a 102(a) rejection based on the EP publication.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friend WO 99/12398 in view of Shi et al. U.S. Patent 5,977,704.

Regarding claims 10-12, Friend teaches all the limitations of claims 10-12, but fails to teach a battery-operated device, hand-held electronic device or a mobile phone provided with the organic luminescent device. Shi et al. in the analogous art teach a battery-operated device, hand-held electronic device or a mobile phone provided with the organic luminescent device **(col. 2 lines 4-10; col 1 lines 34-36)**. Additionally, Shi et al. teach incorporation of such a battery-operated device, hand-held electronic device or a mobile phone provided with the organic luminescent device to improve the usefulness of the display device because organic luminescent devices require low power, are low-cost, are highly manufacturable and are lightweight, have good night visibility and are also multi-colored directional **(col. 2 lines 25-31)**.

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a battery-operated device, hand-held electronic device or a mobile phone with the display device of Friend since such a modification would improve the usefulness of the display device because organic

luminescent devices require low power, possess good night visibility, have low-cost, are highly manufacturable and are lightweight and also multi-colored directional as taught by Shi et al.

Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. U.S. Patent 6,575,800 in view of Shi et al. U.S. Patent 5,977,704.

Regarding claims 10-12, Kobayashi et al. teach all the limitations of claims 10-12, but fails to teach a battery-operated device, hand-held electronic device or a mobile phone provided with the organic luminescent device. Shi et al. in the analogous art teach a battery-operated device, hand-held electronic device or a mobile phone provided with the organic luminescent device **(col. 2 lines 4-10; col 1 lines 34-36)**. Additionally, Shi et al. teach incorporation of such a battery-operated device, hand-held electronic device or a mobile phone provided with the organic luminescent device to improve the usefulness of the display device because organic luminescent devices require low power, are low-cost, are highly manufacturable and are lightweight, have good night visibility and are also multi-colored directional **(col. 2 lines 25-31)**.

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a battery-operated device, hand-held electronic device or a mobile phone with the display device of Kobayashi et al. since such a modification would improve the usefulness of the display device because organic luminescent devices require low power, possess good night visibility, have low-cost, are highly manufacturable and are lightweight and also multi-colored directional as taught by Shi et al.

Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seki et al. WO 99/12395 in view of Shi et al. U.S. Patent 5,977,704.

Regarding claims 10-12, Seki et al. teach all the limitations of claims 10-12, but fails to teach a battery-operated device, hand-held electronic device or a mobile phone provided with the organic luminescent device. Shi et al. in the analogous art teach a battery-operated device, hand-held electronic device or a mobile phone provided with the organic luminescent device **(col. 2 lines 4-10; col 1 lines 34-36)**. Additionally, Shi et al. teach incorporation of such a battery-operated device, hand-held electronic device or a mobile phone provided with the organic luminescent device to improve the usefulness of the display device because organic luminescent devices require low power, are low-cost, are highly manufacturable and are lightweight, have good night visibility and are also multi-colored directional **(col. 2 lines 25-31)**.

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a battery-operated device, hand-held electronic device or a mobile phone with the display device of Seki et al. since such a modification would improve the usefulness of the display device because organic luminescent devices require low power, possess good night visibility, have low-cost, are highly manufacturable and are lightweight and also multi-colored directional as taught by Shi et al. The examiner notes in Friend that the charge-transport layers may be provided between each light emissive region and one or more of the electrodes (page 4 lines 20-21. The examiner notes that the first electrodes of Friend are in rows **(page 13 line 15)**. Therefore the charge transport areas are along the first electrodes and the

first electrodes are linear. The examiner notes that the inner walls 22 of the insulating region define a well and a well has depth which is along each first electrode. The examiner also notes that the photoresist is on the substrate not the electrode page 11 lines 24 and 25 of Friend. Now if the first electrodes are in rows the photoresist areas are in the rows as the photoresists are between the first electrodes and maintained on the substrate. The examiner notes on page 12 lines 16-19 that "The photoresist 21 under the window in the aluminium 27 is removed to the depth of the electrode 24. This forms the structure illustrated in 3(c), where the well has a rectangular footprint out of the plane of the figure, steep side walls and is around 2 micrometers deep." This information in Friend clearly shows the limitation that "providing a relief pattern extending along each first electrode". The first electrodes are in rows of the array. The anode electrode is also patterned page 11 line 14.

Response to Arguments

Applicant's arguments filed April 8, 2003 have been fully considered but they are not persuasive. The applicant asserts that Friend or Seki fails to "teach or suggests "a relief pattern separating the charge transport areas along each first electrode and between neighboring said first electrodes". The examiner notes that the relief pattern of Friend and Seki do separate and are between neighboring the first electrodes as can clearly be seen in Figure 1 of Seki et al. as the partitioning member clearly is between the anodes. As far as the Friend reference Friend show an insulating region separating

and between neighboring the first electrodes. The charge transport layer in Friend is shown in Fig. 8 and Fig. 4 through page 9 lines 4-8. The

Allowable Subject Matter

Claims 13-16 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 13, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a method of manufacturing an organic electroluminescent device including the combination of all the limitations as set forth in claim 13, and specifically depositing a fluid layer including organic charge transport material or a precursor material thereof; converting the fluid layer into an organic charge transport layer having mutually separate charge transport areas which are positioned between the electroluminescent layer and the first electrode layer could not be found elsewhere in prior art.

Regarding claims 14 and 15, claims 14 and 15 are allowed for the reasons given in claim 13, because of their dependency status on claim 13.

Regarding claim 16, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a method of manufacturing an organic electroluminescent device including the combination of all the limitations as set forth in claim 16, and specifically depositing a fluid layer non-selectively in a quantity sufficient to flood both the plurality of first electrodes and the

relief pattern, the fluid layer including organic charge transport material or a precursor material thereof; converting the fluid layer into an organic charge transport layer having mutually separate charge transport areas which are positioned between the electroluminescent layer and the first electrode layer and wherein, during the conversion, the fluid layer breaks up in mutually separate fluid areas which extend between and along the relief pattern, which the fluid areas are then converted into the mutually separate charge transport areas could not be found elsewhere in prior art.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ozawa U.S. Patent 6,194,837 disclose a Display Device with Thin Film Transistor (TFT) and Organic Semiconductor Film in a Luminescent Element.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn Zimmerman whose telephone number is (703) 308-8991. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703) 305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is n/a.

Glenn Zimmerman
June 17, 2003

ASHOK PATEL
PRIMARY EXAMINER